Claims

1. An antimicrobial polymeric coating composition, in particular an antimicrobial coating material, comprising core-shell particles having a core and at least one shell, wherein
   - the core comprises nanoscale particles of an inorganic material having a particle size < 100 nm, and
   - the shell is formed by at least one substance having an antimicrobial action, in particular by at least one metal having an antimicrobial action.

2. The coating composition of claim 1, characterized in that the inorganic material possesses semiconductor properties.

3. The coating composition of claim 1 or 2, characterized in that the inorganic material is a nanoscale oxide, sulfide, carbide or nitride powder.

4. The coating composition of any one of the preceding claims, characterized in that the inorganic material is a nanoscale oxide powder.

5. The coating composition of any one of the preceding claims, characterized in that the inorganic material is titanium dioxide (TiO_2).

6. The coating composition of any one of the preceding claims, characterized in that the metal is silver or copper.

7. The coating composition of any one of the preceding claims, characterized in that the nanoscale particles which form the core possess a particle size of between 5 nm and 50 nm, preferably between 5 nm and 20 nm.

8. The coating composition of any one of the preceding claims, characterized in that the core-shell particles possess a particle size of between 5 nm and 100 nm, preferably between 10 nm and 50 nm, in particular between 20 nm and 45 nm.

9. The coating composition of any one of the preceding claims, characterized in that the coat thickness of the shell is between 0.1 nm and 20 nm, preferably between 1 nm and 10 nm.

10. The coating composition of any one of the preceding claims, characterized in that it is a water-miscible coating composition.

11. The coating composition of any one of the preceding claims, characterized in that it is a coating composition based on acrylic resins or based on polyurethane.

12. The coating composition of any one of the preceding claims, characterized in that it is a coating composition based on a powder coating material.

13. The coating composition of any one of the preceding claims, characterized in that the core-shell particles are present in the composition in amounts of between 0.1% and 15% by weight, preferably in amounts of between 0.25% and 10% by weight and with particular preference in amounts between 2% and 4% by weight.

14. The coating composition of any one of the preceding claims, characterized in that it is present as a coat on a substrate.

15. A process for preparing an antimicrobial polymeric coating composition of any one of the preceding claims, characterized in that core-shell particles having a core of nanoscale particles of an inor-

ganic material having a particle size < 100 nm and a shell of at least one substance having an antimicrobial action are mixed, preferably homogenized, with an organic polymer material.

16. The process of claim 15, characterized in that the core-shell particles are produced using nanoscale particles of an inorganic material having a particle size < 100 nm as core, and at least one metal is applied as a shell to these core-forming particles in solution or in suspension, by means of a radiation-induced redox reaction.

17. The process of claim 16, characterized in that the redox reaction is induced by UV radiation.

18. The process of claim 16 or claim 17, characterized in that the metal is copper or silver.

19. The process of any one of claims 15 to 18, characterized in that following application of the shell the solvent is removed and preferably the powder thus obtained is calcined.

20. An article characterized in that it is coated at least partly, preferably completely, with the coating composition of any one of claims 1 to 14.

21. The use of the coating composition of any one of claims 1 to 14 for coating insulating materials and insulants, especially elastomeric insulating materials and insulants.

22. The use of the coating composition of any one of claims 1 to 14 for coating industrial insulation, industrial foams or thermal and/or acoustic insulation.

23. The use of the coating composition of any one of claims 1 to 14 for coating air-conditioning plants and refrigeration units and also parts thereof.

24. The use of the coating composition of any one of claims 1 to 14 as a paint for marine craft.

25. The use of the coating composition of any one of claims 1 to 14 as a wood preservative coating.

26. The use of the coating composition of any one of claims 1 to 14 for coating substrates in hygiene installations, hospitals and in the food industry.
